

BIOLOGICAL EVALUATION
FOR
1995 GYPSY MOTH CONTROL PROGRAM
MONONGAHELA NATIONAL FOREST

This biological evaluation (BE) will discuss and document the significant effects, if any, to threatened, endangered, and sensitive (TES) species from implementation of the preferred/selected alternative as described in the environmental assessment, "Gypsy moth management on the Monongahela National Forest, USDA, FY 1995".

This document is part of the environmental analysis and contains site specific information relative to the location of TES species. It is part of the project analysis file, is available to selected Monongahela National Forest personnel such as the ID team, the decision maker (Forest Supervisor), to Forest Service regional office personnel, or judges, in the event of appeal, but is not normally shared with the general public. Providing information relative to the specific locations of TES species to the general public can lead to the further decline of these species through illegal collection or vandalism..

The preferred/selected alternative this BE discusses is alternative two, "Direct Control Using Biological Insecticides." For a more complete discussion of what management activities this alternative entails, one should refer to the environmental assessment, pages 17-18.

In summary, this alternative proposes to:

Treat 15,672 acres with either nucleopolyhedrosis virus (NPV) or *Bacillus Thuringiensis* var. *kurstaki* (BTK).

Background:

In an effort to avoid, as much as possible, any adverse impacts to TES species up front and early on, from any gypsy moth management activities that may occur later in 1995 stemming from the completed environmental analysis, a meeting was held on November 16, 1994. At this meeting, two members of the gypsy moth ID team met with biologists from the Monongahela National Forest, the WVDNR endangered species section, and the WVDNR Natural Heritage Program. At that time, information on tentative 95 spray blocks were on hand. Systematically, biologists compared their maps that show known locations of TES species to proposed spray blocks.

Whether any TES species were known from within, or nearby, proposed spray blocks was determined for each block. In instances where known TES species were found to occur within or nearby a proposed spray block, a discussion followed regarding whether or not the proposed spray treatment was considered to adversely impact the particular TES species in question. What mitigation measures should be employed to offset any adverse effect was also discussed.

Species that were considered/addressed as to whether they were known to occur within the proposed spray blocks, or were nearby, or not, include those species listed under the Monongahela National Forest column in the March 8, 1994 R9 Sensitive Species update. This list includes nine T&E plants or animals and

fifty-seven sensitive species (38 plants and 19 animals). An additional plant, the Appalachian Shoestring fern, was also considered because it was added to the MNF RFSS list at a later date. Selected state 'species of concern' were also considered.

Below is a summary of the biologists review of November 16, 1994, that shows which TES species were known to occur, or were known from nearby proposed spray blocks.

Spray Blocks 101, 102, - Although no TES species were known from within
103, and 104. these proposed spray blocks, the sensitive fish, Cheat minnow, was known from Horseshoe Run downstream from these spray areas.

Spray Blocks 112, 104, - None of the biologists had any records or knowledge of
105, 106, 108, 109, any TES species within or nearby these spray blocks.
113, 301, 302

Spray Block 303 - Dropped from spray program (for other than TES reasons)

Spray Block 107 - No known records of any TES within this block. However, a population of the endangered running buffalo clover is known from outside the spray area, but nearby.

Spray Block 110 - This block contains two sites for the sensitive plant, Appalachian blue violet.

Spray Block 503 - No known records of any TES species within this block. However, the block is nearby a past nesting site of the peregrine falcon, nearby known sites for the sensitive plant White alumroot, and nearby known sites for the Allegheny woodrat. The block is also in an area known for its high endemism of rare moths, such as the boreal sprawler moth. These moths are not TES species on the Forest but some are state species of concern. Unless these moths become candidates C1 or C2 for listing, are globally ranked as G1-G3 by the Nature Conservancy and become Forest Service sensitive species, or if they are listed as federally threatened or endangered by the US Fish and Wildlife Service, the Forest Service has no legal or Forest Service policy obligation to avoid impacts to these state species of concern.

Spray Blocks 501, 502 - Although neither blocks include caves known to be used as either summer maternity sites or winter hibernacula by the endangered Virginia big-eared bat (VBEB), both these blocks are considered foraging area for the VBEB that use Cave Mountain Cave. The blocks are also in an area believed to have a high endemism of moth species. Peregrine falcons have nested nearby in the past.

See letter from Craig Stihler to Gary Bustamente of November 16, 1994 (attached).

Discussion of Effects:

Cheat Minnow - Downstream from spray blocks 101-104 in Horseshoe Run.

All four of these blocks are proposed for spraying with BTK. Unlike demilin, which is a frequently used gypsy moth control agent that is known to effect aquatic invertebrates and thus the food supply of small non-game fish such as the Cheat Minnow, BTK is not known to effect aquatic invertebrates. Demilin is not being used in the 1995 gypsy moth spray program on the Monongahela National Forest. Because the Cheat Minnow sites are outside and downstream from spray blocks 101-104, because BTK will be the gypsy moth control agent applied and because BTK will not effect the food supply of this fish species because it is not known to adversely effect aquatic invertebrates, it is concluded that it is unlikely that implementation of alternative two will lead to the loss of viability or cause a trend toward federal listing of the Cheat Minnow in Horseshoe Run.

Running Buffalo - Nearby Spray Block 107.
Clover

In areas of high gypsy moth egg masses, such as have been documented in the areas proposed for spraying in this project, it is highly likely that if the area is not treated to control gypsy moth, the area will be heavily defoliated. During heavy defoliation, gypsy moth caterpillars are at such high numbers that as they eat the leaves of preferred tree species, they have no choice but to eventually turn to the leaves of less desirable and/or understory plants, including herbaceous plants, for food. Control of gypsy moths in the vicinity of a population of the endangered Running Buffalo Clover can, at a minimum, delay the buildup of gypsy moths in the area around this endangered plant population and, therefore, delay or reduce the possibility of the plant being consumed by gypsy moths. Being a legume, running buffalo clover is likely to be highly palatable to the gypsy moth caterpillar, as other clovers are to other herbivorous animals.

Being a natural occurring compound, BTK is not known to be harmful to plants.

Because the spraying of block 107 with BTK will not harm the nearby running buffalo clover population and will delay the buildup of gypsy moth caterpillars in the vicinity of this endangered plant population, it is concluded that implementation of alternative two will not adversely effect the federally endangered running buffalo clover. Treatment of block 107 with BTK can help maintain the local existence and present abundance of running buffalo clover.

Appalachian Blue - In Spray Block 110.
Violet

Similar to the discussion about running buffalo clover, the control of gypsy moth caterpillars through the spraying of block 110 with BTK is considered advantageous to the

continued survival of this sensitive plant. Not controlling gypsy moth in this block of high gypsy moth egg mass numbers can lead to the defoliation and subsequent loss of this sensitive herbaceous understory plant.

It is concluded that implementation of alternative two will not lead to the loss of viability or cause a trend toward federal listing of the Appalachian blue violet, and is likely to maintain the local existence and present abundance of this plant.

Peregrine Falcon/- Nearby Spray Blocks 503, 501, and 502.
Bald Eagle

Although neither BTK or NPV (Gypchek) is considered to effect these endangered raptors, these three spray blocks, for other T&E reasons, will be treated with NPV. The concern of the spray program on the peregrine falcon and bald eagle is not on the gypsy moth control agent being applied but from the potential for the spray plane to pass too close to an active endangered raptor nest and cause the incubating or brooding birds to abandon their nest site, to cause the chicks to fall from their nests or be preyed upon while the parent birds are absent, or to have eggs broken or preyed upon if the female is scared away from its nest.

This concern has been mitigated by incorporating into the project plan the mitigation measure that spray planes will not be allowed within 1/2 mile of known, active peregrine falcon and bald eagle nests. See page 29 of the EA.

Although the peregrine falcon has not been known to nest on the Forest for the past several years, a spring 'cliff watch' has been held, for the past several years, to help state and federal biologists determine if and where peregrine falcons are nesting. If the planned April of 1995 cliff watch reveals that peregrines have returned to the Forest to nest, this "no fly" site information will be relayed to the spray plane pilots so they can adjust their flight paths from airports to spray blocks to avoid the nests.

The location of the one known active bald eagle nest in the general vicinity of spray blocks 501-503 will be provided to the pilot as a "no fly" area so this sensitive area can be avoided, as well.

It is concluded that through the application of the above described mitigation measure that implementation of alternative two will not adversely effect the bald eagle or the peregrine falcon.

Allegheny
Woodrat

- Near Spray Block 503

Although not known from within this spray block, a location for this sensitive mammal is nearby. This rodent species relies heavily on hard mast, such as oak acorns, as its fall and winter food source. The oak tree group is a highly preferred food source of the gypsy moth larvae and usually

suffers the highest rates of defoliation and mortality by gypsy moth.

Treatment of spray block 503 with NPV is anticipated to reduce the defoliation and subsequent abortion of its acorn crop by the oaks, thus maintaining a critical food source for this sensitive species. Mortality of oak trees from repeated gypsy moth defoliation over a several year period is considered to be even more detrimental to the food supply of the Allegheny woodrat because long term acorn supplies are effected. NPV, because it is specific to gypsy moth caterpillars in its effect, will not adversely effect the health of the woodrat.

It is concluded that the treatment of unit 503 with NPV through implementation of alternative two will not lead to the loss of viability, or cause a trend toward federal listing of the Allegheny Woodrat.

White Alum Root - Near Spray Block 503.

Being specific in its effect on gypsy moth caterpillars, the use of NPV in block 503 is not considered to adversely effect this sensitive plant.

As discussed for other TES plant species above, protection from defoliation in the vicinity of this plant is considered to be more beneficial in maintaining this plant in its present environment and habitat, than not controlling the gypsy moth and allowing defoliation. Allowing defoliation can greatly change the microclimate that this plant has found to meet its needs in this portion of the Forest. Removal of the forest canopy, midstory and understory through defoliation by the gypsy moth can lead to an increase in stress, failure of reproduction or complete loss of such sensitive plants. Control of gypsy moth caterpillars through treatment can delay defoliation of the area in the immediate vicinity of this sensitive plant.

It is concluded that implementation of alternative two will not lead to the loss of viability or result in a trend toward federal listing of the white alumroot.

Virginia Big-eared Bat - In vicinity of Spray Blocks 501-503.

Based on telemetry studies conducted by the WVDNR endangered species program, although none of these spray blocks include caves that harbor the federally endangered VBEB, these spray blocks are considered foraging habitat for this species. A major food item of the VBEB is moths. Because BTK has the ability to negatively effect populations of all moth species within the spray blocks while NPV is a selective control agent that only effects gypsy moth caterpillars and not other caterpillar/moth species, as mitigation to avoid adversely effecting the food supply of this bat species, the use of NPV as a gypsy moth control agent in spray blocks 501-503 was recommended and incorporated. Bat foraging is not limited to spray blocks 501-503, and a great amount of area within a several mile radius of the cave that harbors

these VBEB will not be treated and can provide a full compliment of moth species for the VBEB to feed on.

In addition, no spraying will be allowed within 1/4 mile of VBEB caves.

It is concluded that because gypsy moth control will be restricted to the use of NPV (Gypchek) in spray blocks 501-503, the wide spectrum of naturally occurring moths used as food by the VBEB will not be adversely effected and that implementation of alternative two will not adversely effect the Virginia Big-eared Bat.

Rare Moths/
lepidoptera

- Spray Blocks 501-503

Although not listed as T&E or as a sensitive species, some rare moth species, such as the boreal sprawler moth, are suspected to occur in or nearby spray blocks 501-503. These rare moths are classified as species of concern by the WVDNR Natural Heritage Program. As previously mentioned, although legally the Forest Service has no obligation to protect state species of concern unless they also qualify as a TES species, a good faith effort is made to protect these species during Forest Service management activities, if possible.

In this instance, the use of NPV in spray blocks 501-503, primarily to mitigate impacts to the VBEB, will also be beneficial to rare/state species of concern moths. Because NPV is specific to gypsy moth caterpillars and not other caterpillar species, its use is not anticipated to adversely effect these rare moths.

Other unknown TES species that may occur in all spray blocks.

It is logical to assume that some of these spray blocks may contain individuals or populations of existing, but as yet undocumented, TES species. Eventhough these blocks have not been completely inventoried for TES there is little concern in this instance about any of these TES species being adversely effected..


Because NPV, planned for use in three of the nineteen spray blocks, is selective in effecting only gypsy moth caterpillars and there is no evidence that NPV adversely effects plants, birds, mammals, other lepidoptera, other insects, other invertebrates, etc., it is concluded that any presently unknown TES species within NPV treatment blocks will not be adversely effected.

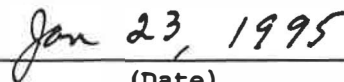
Similarly, because BTK, planned for use in sixteen of the nineteen spray blocks, is only known to adversely effect moth species, and is not known to adversely effect birds, mammals, fish, plants, non-lepidopterin invertebrates, etc. any presently unknown TES species within BTK treatment blocks should not be adversely effected. At present, there are no lepidopteran species that occur on the Monongahela National Forest TES species list.

Conclusion

It is concluded that through implementation of mitigation measures such as the use of NPV in selected spray blocks and redirecting flight paths of spray planes away from endangered raptor nests, there will be no adverse effects to any T&E species from implementation of alternative two.

Implementation of alternative two should not lead to the loss of viability or cause a trend toward federal listing of any sensitive species. Its implementation can assist in maintaining individuals or populations of sensitive plants and animals.


HARRY PAWELCZYK
Forest Wildlife Biologist



(Date)

Enclosure



**STATE OF WEST VIRGINIA
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16 November 1994

**Mr. Gary Bustimenti
U.S. Forest Service
Monongahela National Forest
200 Sycamore Street
Elkins, WV 26241**

Dear Gary:

The purpose of this letter is to document in writing the opinions of WVDNR biologists concerning the potential impacts of the 1995 proposed gypsy moth control program on rare, threatened, and endangered plants and animals. Because of a recent death in his family, Tom Allen was not able to be present at the 16 November meeting, and I will ask Tom to provide specific comments concerning rare lepidoptera in the proposed spray blocks.

Spray blocks in District 1:

There were no rare plant or animal concerns associated with any of the blocks within this district (Blocks 101 - 113) if the block are treated with Bt as proposed.

Spray blocks in District 3:

No problems with the three proposed blocks to be treated with Bt (Blocks 301 - 303).

Spray blocks in District 5:

Block 501. Use Gypcheck or drop block. Important foraging area for endangered Virginia big-eared bats. Areas of high biological diversity including rare lepidoptera.

Block 502. Use Gypcheck if possible, but Bt is acceptable if Gypcheck is not available. Foraging area for Virginia big-eared bats. Possible rare lepidoptera.

Block 503. Use Gypcheck or drop block. Rare lepidoptera. Possible peregrine falcon nesting area nearby. Peregrine falcon surveys will be conducted in spring. If birds are present, this block may have to be re-evaluated.

Proposed long-term gypsy moth study.

No problem with any of the nine proposed study blocks.

Sincerely,

A handwritten signature in black ink, appearing to read "Craig Stihler". The signature is fluid and cursive, with the first name "Craig" written in a larger, more prominent script than the last name "Stihler".

Craig Stihler
Wildlife Biologist
Wildlife Resources Section